

0590  
0314

#69



OIFE

## RAW SEQUENCE LISTING

DATE: 03/19/2003

PATENT APPLICATION: US/09/901,572A

TIME: 12:31:56

Input Set : A:\010898.txt

Output Set: N:\CRF4\03192003\I901572A.raw

3 <110> APPLICANT: Nippon Zeon Co., Ltd.,  
 5 <120> TITLE OF INVENTION: Modified DNA molecules, Recombinants and uses thereof  
 7 <130> FILE REFERENCE: J209  
 C--> 9 <140> CURRENT APPLICATION NUMBER: US/09/901,572A  
 C--> 10 <141> CURRENT FILING DATE: 2003-03-11  
 12 <160> NUMBER OF SEQ ID NOS: 4  
 14 <170> SOFTWARE: PatentIn Ver. 2.1  
 16 <210> SEQ ID NO: 1  
 18 <211> LENGTH: 1306  
 19 <212> TYPE: DNA  
 20 <213> ORGANISM: Mycoplasma gallisepticum  
 22 <220> FEATURE:  
 24 <223> OTHER INFORMATION: TTM-1 gene  
 26 <400> SEQUENCE: 1  
 28 aaaaacatca gattgttaat ctgatattctt tgcttaaaaa aacacaaaat cttctaacaa 60  
 29 aatcctaaat aaataagccg tttaattaac taaaaaatta aaaaaatggt ttttcttatc 120  
 30 aaccaaaatt ctctagtaat aaacgcttat ttatttttat ttttagtcat cttttaagat 180  
 31 ataaatatat cttaatatct tatgaataag aaaagaatca tcttaaagac tattagtttg 240  
 32 ttaggtacaa catcctttct tagcattggg atttctagct gtatgtctat tactaaaaaa 300  
 33 gatgcaaac ccaataatgg ccaaacccaa ttagaagcag cgcgaaatgga gttaacagat 360  
 34 ctaatcaatg ctaaagcgat gacattagct tcaactacaag actatgccaa gattgaagct 420  
 35 agttttatcat ctgcttatag tgaagctgaa acagttaaca ataaccttaa tgcaacatta 480  
 36 gaacaactaa aaatggctaa aactaattta gaatcagcca tcaaccaagc taatacggat 540  
 37 aaaacgactt ttgataatga acacccaaat ttagttgaag catacaaagc actaaaaacc 600  
 38 acttttagaac aacgtgctac taaccttgaa ggtttgctcat caactgctta taatcaaatt 660  
 39 cgcaataatt tagtgatct atacaataaa gctagtagtt taataactaa aacactagat 720  
 40 ccactaaatg ggggaacgct tttagattct aatgagatta ctacagttaa tcggaatatt 780  
 41 aataatacgt tatcaactat taatgaacaa aagactaatg ctgatgcatt atctaatagt 840  
 42 tttattaaaa aagtgattca aaataatgaa caaagttttg tagggacttt tacaacgct 900  
 43 aatgttcaac cttcaaacta cagttttggt gcttttagtg ctgatgtaac acccgctcaat 960  
 44 tataaatatg caagaaggac cgtttggaat ggtgatgaac cttcaagtag aattcttgca 1020  
 45 aacacgaata gtatcacaga tgtttcttggt atttatagtt tagctggaac aaacacgaag 1080  
 46 taccaattta gttttagcaa ctatggtcca tcaactggtt atttatattt cccttataag 1140  
 47 ttggttaaag cagctgatgc taataacggt ggattacaat acaaattaaa taatggaaat 1200  
 48 gttcaacaag ttgagtttgc cacttcaact agtgcaaata atactacagc taatccaact 1260  
 49 ccagcagttg atgagattaa agttgctaaa atcgttttat caggtt 1306  
 50 <210> SEQ ID NO: 2  
 51 <211> LENGTH: 3189  
 52 <212> TYPE: DNA  
 53 <213> ORGANISM: Mycoplasma gallisepticum  
 55 <220> FEATURE:  
 57 <223> OTHER INFORMATION: mgc3 gene  
 59 <400> SEQUENCE: 2

ENTERED

## RAW SEQUENCE LISTING

DATE: 03/19/2003

PATENT APPLICATION: US/09/901,572A

TIME: 12:31:56

Input Set : A:\010898.txt

Output Set: N:\CRF4\03192003\I901572A.raw

```

61 atgaatattt ctaaaaaact taaaagttat acattgatag gtggattagc tgtatttgga 60
62 gctcttggtt ctgcaagctt tggctttaag caatcagata agagtaacga taacacgcaa 120
63 ttagttaatc aagcaagaac gctagatgct aattctgtta gacttgcagg tcttgacaa 180
64 aatgggtcgt tgttcaatac agttcttaga gatgttgatg ataactttat aacagcagct 240
65 aatggaacaa ttatcaaatt agatagtttt actaaacat tatatggttt agatctaagt 300
66 gatgattgtg gtggatacaa agtaaaacaa atagtttcag attacacaac tagcagaaat 360
67 agatttgatc aaagacaaac aagagcatat tatgctctgt tggttaatga tgaagctaac 420
68 gttcatttaa aaagaattaa tactaactca aatagaattg gtaatagaaa caacaattct 480
69 aagtttgtaa ttggtggtgt tgataatcca gctcacgtaa ttagatttac tgatgatggg 540
70 actaaattta attttataaaa ccaaactcaa ggtgaaattg ttaatgactt catttttagat 600
71 ggcaccaatc tacctaaaga ttacaccca gattggtata acttatacat tcaaagaaag 660
72 atcttaccaa atgacgtcaa cactgcagtt gttccttggc cagtaggtag agttagtggg 720
73 acaaagtctg atgatgggat gtttgattgt gggaatggtc aaataactaa tacagatcct 780
74 attgctcaa ctaaaaccac tactgataat caaaatcctt caacttttaa ttcaggagca 840
75 atgcctggtg caaacaatag atacgattct caattgaatg tcaagcatag aattaaaaca 900
76 tctttccaat tagatgaaaa atttgtttat ccagaatgga ctggttctga agagaataaa 960
77 aatattacaa gattagctac tggaagtttg ccaagcaacg aaagatattg gattcttgac 1020
78 ataccggga ctccacaagt tactttaaaa gaagattcag ttaacgtatt ttcaagacta 1080
79 tacttaact cagttaattc tttatcattc attggtgata gtatttatat ttttgggtacc 1140
80 tctgaattac catcattatg gtactattca ttcccaacta gattatctga tctaaccgct 1200
81 ttgaatcaag ttaaaacaga tgatattgaa gcttcaagca ctgataacgg tacaacaaca 1260
82 aacggaacaa cgacaacagc tgatacatct agtgggtcaa caggtgctgg aacaggaaat 1320
83 actactaaca cttctcaaac agtttctaact cctactttaa atacttatcg tagttttgga 1380
84 attgatagta aaccaacttc tgcaaacaaa atagatgaaa ctaattgggc agatcctaac 1440
85 gttattgaag caagaatata tgctgaatac agattaggtg ttcaaaatga aattccaata 1500
86 actaatgcag gaaactttat ccgaaacaca attggtggtg ttggttttac ttcaacaggt 1560
87 tcaagagtag ttttaagagc ttcttataac ggtgatcaac gtccaactgg aaacttccaa 1620
88 cctttcttat acgtatttgg ttatttagga taccaacaaa ctagaacagg aactttctgg 1680
89 tacggaacat ataagctttt aaacaacagc ccttacgacg tattagattc tccaagagta 1740
90 ggtactgaaa ccaatcaatt tagaagaact tcattaacat accctgttat ggggtggatat 1800
91 ctaactgaag aaggtgctag aagtttctct aatactccat atataagagc acaaggtgac 1860
92 acaccagaaa gccgaagcat cttccaatct ggctattctg ataatactta tgagtacatt 1920
93 caatcagttt taggatttga tggaattaga aataacttaa atgttggggg taaagcatca 1980
94 agcttcttaa actcaaatag accaaatcca aacggtctag aaatgattgc tgcaacaaca 2040
95 tacttaagat cacaaattgg attagctaga acatctggat taccaaacca acaaccattc 2100
96 ggaacaactc accaagttat ttcagtatca cctggtgatc agttctcatc aattaagaat 2160
97 attagaacaa tcttccttgg taaccagtta tgggtacttct tattcacaaa tgaaaataat 2220
98 aaatctagtg tttatacatt aagattagct gactcaagta accctgatgc gtcaagctca 2280
99 ttcagtccaa caagtttaat tgacgttaat gaaattgggtg taatcttacc tttattagac 2340
100 aattcattct atacagtaaa tgctgctggt aatgttgcat tgttctcatc aaacctgggt 2400
101 tctcctggat catatactgc tgtaaataca tttaatcaga acttatctga tattgctttt 2460
102 gaaggttctg gtgctaagta tacatctgat ttctggggaa caatccaatt caaacccgat 2520
103 gagtacttaa ttcaaaatgg gttcactagt caagtggcta gaaacttcgt tacaaccaa 2580
104 agcttcttaa acagtttagt tgacttcact cctgctaatt ctggtactaa ctaccgtgta 2640
105 gtggttgatc ctgatggtaa tttaacaaac caaaacctac ctctaaaagt tcagatccaa 2700
106 tacttagatg gtaagtatta tgatgctaaa ttaaagaaca ataatttagt aacattctct 2760
107 tataacaact ttggcgctt accttcatgg gtagtgcta cagcaattgg tagtacatta 2820
108 ggtattcttg caattatgat catcttagga ttagctatcg gtattccttt aagagctcaa 2880
109 agaaaattac aagacaaagg gttcaaaaca acattcaaaa aagttgatac cttgactgct 2940

```

## RAW SEQUENCE LISTING

DATE: 03/19/2003

PATENT APPLICATION: US/09/901,572A

TIME: 12:31:56

Input Set : A:\010898.txt

Output Set: N:\CRF4\03192003\I901572A.raw

```

110 gctgttggtt cagtttacaa gaagattatt acccaaactg ctaacgttaa gaaaaaacct 3000
111 gctgcttttag gtgctggttaa atctggtgat aagaaacctg ctgctgctgc taaacctgct 3060
112 gctccagcta aaccatctgc accaaaagct agctcaccag ctaaaccaac tgggcctaaa 3120
113 tctggtgcgc ctacaaaacc aactgctcct aagccagctg ctccaaaacc aaccgctccc 3180
114 aaagaataa                                     3189
115 <210> SEQ ID NO: 3
116 <211> LENGTH: 456
117 <212> TYPE: PRT
118 <213> ORGANISM: Mycoplasma gallisepticum
120 <220> FEATURE:
122 <223> OTHER INFORMATION: TTM-1 portion of pNZ40K-S
124 <400> SEQUENCE: 3
126 Met His Tyr Phe Arg Arg Asn Cys Ile Phe Phe Leu Ile Val Ile Leu
127   1           5           10           15
128 Tyr Gly Thr Asn Ser Ser Pro Ser Thr Gln Asn Val Thr Ser Arg Glu
129           20           25           30
130 Val Val Ser Ser Val Gln Leu Ser Glu Glu Glu Ser Thr Phe Tyr Leu
131           35           40           45
132 Cys Pro Pro Pro Val Gly Ser Thr Val Ile Arg Leu Glu Phe Gly Cys
133           50           55           60
134 Met Ser Ile Thr Lys Lys Asp Ala Asn Pro Asn Asn Gly Gln Thr Gln
135           65           70           75           80
136 Leu Glu Ala Ala Arg Met Glu Leu Thr Asp Leu Ile Asn Ala Lys Ala
137           85           90           95
138 Met Thr Leu Ala Ser Leu Gln Asp Tyr Ala Lys Ile Glu Ala Ser Leu
139           100          105          110
140 Ser Ser Ala Tyr Ser Glu Ala Glu Thr Val Asn Asn Asn Leu Asn Ala
141           115          120          125
142 Thr Leu Glu Gln Leu Lys Met Ala Lys Thr Asn Leu Glu Ser Ala Ile
143           130          135          140
144 Asn Gln Ala Asn Thr Asp Lys Thr Thr Phe Asp Asn Glu His Pro Asn
145           145          150          155          160
146 Leu Val Glu Ala Tyr Lys Ala Leu Lys Thr Thr Leu Glu Gln Arg Ala
147           165          170          175
148 Thr Asn Leu Glu Gly Leu Ser Ser Thr Ala Tyr Asn Gln Ile Arg Asn
149           180          185          190
150 Asn Leu Val Asp Leu Tyr Asn Lys Ala Ser Ser Leu Ile Thr Lys Thr
151           195          200          205
152 Leu Asp Pro Leu Asn Gly Gly Thr Leu Leu Asp Ser Asn Glu Ile Thr
153           210          215          220
154 Thr Val Asn Arg Asn Ile Asn Asn Thr Leu Ser Thr Ile Asn Glu Gln
155           225          230          235          240
156 Lys Thr Asn Ala Asp Ala Leu Ser Asn Ser Phe Ile Lys Lys Val Ile
157           245          250          255
158 Gln Asn Asn Glu Gln Ser Phe Val Gly Thr Phe Thr Asn Ala Asn Val
159           260          265          270
160 Gln Pro Ser Asn Tyr Ser Phe Val Ala Phe Ser Ala Asp Val Thr Pro
161           275          280          285
162 Val Asn Tyr Lys Tyr Ala Arg Arg Thr Val Trp Asn Gly Asp Glu Pro

```

## RAW SEQUENCE LISTING

DATE: 03/19/2003

PATENT APPLICATION: US/09/901,572A

TIME: 12:31:56

Input Set : A:\010898.txt

Output Set: N:\CRF4\03192003\I901572A.raw

```

163      290      295      300
164 Ser Ser Arg Ile Leu Ala Asn Thr Asn Ser Ile Thr Asp Val Ser Trp
165 305      310      315      320
166 Ile Tyr Ser Leu Ala Gly Thr Asn Thr Lys Tyr Gln Phe Ser Phe Ser
167      325      330      335
168 Asn Tyr Gly Pro Ser Thr Gly Tyr Leu Tyr Phe Pro Tyr Lys Leu Val
169      340      345      350
170 Lys Ala Ala Asp Ala Asn Asn Val Gly Leu Gln Tyr Lys Leu Asn Asn
171      355      360      365
172 Gly Asn Val Gln Gln Val Glu Phe Ala Thr Ser Thr Ser Ala Asn Asn
173      370      375      380
174 Thr Thr Ala Asn Pro Thr Pro Ala Val Asp Glu Ile Lys Val Ala Lys
175 385      390      395      400
176 Ile Val Leu Ser Gly Leu Arg Phe Gly Gln Asn Thr Ile Glu Leu Ser
177      405      410      415
178 Val Pro Thr Gly Glu Gly Asn Met Asn Lys Val Ala Pro Met Ile Gly
179      420      425      430
180 Asn Ile Tyr Leu Ser Ser Asn Glu Asn Asn Ala Asp Lys Ile Pro Gly
181      435      440      445
182 Tyr Arg Arg Pro Gly Thr Phe Leu
183      450      455
184 <210> SEQ ID NO: 4
185 <211> LENGTH: 1224
186 <212> TYPE: PRT
187 <213> ORGANISM: Mycoplasma gallisepticum
189 <220> FEATURE:
191 <223> OTHER INFORMATION: MGC3 encoded by mgc3 gene
193 <400> SEQUENCE: 4
195 Met Asn Ile Ser Lys Lys Leu Lys Ser Tyr Thr Leu Ile Gly Gly Leu
196 1 5 10 15
197 Ala Val Phe Gly Ala Leu Gly Ser Ala Ser Phe Gly Phe Lys Gln Ser
198 20 25 30
199 Asp Lys Ser Asn Asp Asn Thr Gln Leu Val Asn Gln Ala Arg Thr Leu
200 35 40 45
201 Asp Ala Asn Ser Val Arg Leu Ala Gly Leu Gly Gln Asn Gly Ser Leu
202 50 55 60
203 Phe Asn Thr Val Leu Arg Asp Val Asp Asp Asn Phe Ile Thr Ala Ala
204 65 70 75 80
205 Asn Gly Thr Ile Ile Lys Leu Asp Ser Phe Thr Lys Pro Leu Tyr Gly
206 85 90 95
207 Leu Asp Leu Ser Asp Asp Cys Gly Gly Tyr Lys Val Lys Gln Ile Val
208 100 105 110
209 Ser Asp Tyr Thr Thr Ser Arg Asn Arg Phe Asp Gln Arg Gln Thr Arg
210 115 120 125
211 Ala Tyr Tyr Ala Leu Leu Val Asn Asp Glu Ala Asn Val His Leu Lys
212 130 135 140
213 Arg Ile Asn Thr Asn Ser Asn Arg Ile Gly Asn Arg Asn Asn Asn Ser
214 145 150 155 160
215 Lys Phe Val Ile Gly Gly Val Asp Asn Pro Ala His Val Ile Arg Phe

```

## RAW SEQUENCE LISTING

DATE: 03/19/2003

PATENT APPLICATION: US/09/901,572A

TIME: 12:31:56

Input Set : A:\010898.txt

Output Set: N:\CRF4\03192003\I901572A.raw

216					165					170					175	
217	Thr	Asp	Asp	Gly	Thr	Lys	Phe	Asn	Phe	Thr	Asn	Gln	Thr	Gln	Gly	Glu
218				180					185					190		
219	Ile	Val	Asn	Asp	Phe	Ile	Leu	Asp	Ala	Pro	Ile	Leu	Pro	Lys	Asp	Leu
220			195					200				205				
221	His	Pro	Asp	Trp	Tyr	Asn	Leu	Tyr	Ile	Gln	Arg	Lys	Ile	Leu	Pro	Asn
222		210				215					220					
223	Asp	Val	Asn	Thr	Ala	Val	Val	Pro	Trp	Pro	Val	Gly	Arg	Val	Ser	Gly
224	225				230					235						240
225	Thr	Asn	Ala	Asp	Asp	Gly	Met	Phe	Asp	Cys	Gly	Asn	Gly	Gln	Ile	Thr
226				245					250					255		
227	Asn	Thr	Asp	Pro	Ile	Ala	Gln	Thr	Lys	Thr	Thr	Thr	Asp	Asn	Gln	Asn
228			260					265					270			
229	Pro	Ser	Thr	Phe	Asn	Ser	Gly	Ala	Met	Pro	Gly	Ala	Asn	Asn	Arg	Tyr
230			275				280					285				
231	Asp	Ser	Gln	Leu	Asn	Val	Lys	His	Arg	Ile	Lys	Thr	Ser	Phe	Gln	Leu
232		290				295					300					
233	Asp	Glu	Arg	Ile	Asn	Thr	Asn	Ser	Asn	Arg	Ile	Gly	Asn	Arg	Asn	Asn
234	305				310					315					320	
235	Asn	Ser	Lys	Phe	Val	Ile	Gly	Gly	Val	Asp	Asn	Pro	Ala	His	Val	Ile
236			325					330					335			
237	Arg	Phe	Thr	Asp	Gly	Thr	Lys	Phe	Asn	Phe	Thr	Asn	Gln	Thr	Gln	
238			340				345					350				
239	Gly	Glu	Ile	Val	Asn	Asp	Phe	Ile	Leu	Asp	Ala	Pro	Ile	Leu	Pro	Lys
240			355			360					365					
241	Asp	Leu	His	Pro	Asp	Trp	Tyr	Asn	Leu	Tyr	Ile	Gln	Arg	Lys	Ile	Leu
242		370				375					380					
243	Pro	Asn	Asp	Val	Asn	Thr	Ala	Val	Val	Pro	Trp	Pro	Val	Gly	Arg	Val
244	385				390					395					400	
245	Ser	Gly	Thr	Asn	Ala	Asp	Asp	Gly	Met	Phe	Asp	Cys	Gly	Asn	Gly	Gln
246			405					410					415			
247	Ile	Thr	Asn	Thr	Asp	Pro	Ile	Ala	Gln	Thr	Lys	Thr	Thr	Thr	Asp	Asn
248			420					425				430				
249	Gln	Asn	Pro	Ser	Thr	Phe	Asn	Ser	Gly	Ala	Met	Pro	Gly	Ala	Asn	Asn
250			435				440					445				
251	Arg	Tyr	Asp	Ser	Gln	Leu	Asn	Val	Lys	His	Arg	Ile	Lys	Thr	Ser	Phe
252		450				455					460					
253	Gln	Leu	Asp	Glu	Lys	Phe	Val	Tyr	Pro	Glu	Trp	Thr	Gly	Ser	Glu	Glu
254	465				470					475					480	
255	Asn	Lys	Asn	Ile	Thr	Arg	Leu	Ala	Thr	Gly	Ser	Leu	Pro	Ser	Asn	Glu
256			485					490				495				
257	Arg	Tyr	Trp	Ile	Leu	Asp	Ile	Pro	Gly	Thr	Pro	Gln	Val	Thr	Leu	Lys
258			500					505				510				
259	Glu	Asp	Ser	Val	Asn	Val	Phe	Ser	Arg	Leu	Tyr	Leu	Asn	Ser	Val	Asn
260			515				520					525				
261	Ser	Leu	Ser	Phe	Ile	Gly	Asp	Ser	Ile	Tyr	Ile	Phe	Gly	Thr	Ser	Glu
262		530				535					540					
263	Leu	Pro	Ser	Leu	Trp	Tyr	Tyr	Ser	Phe	Pro	Thr	Arg	Leu	Ser	Asp	Leu
264	545				550					555					560	

**VERIFICATION SUMMARY**

DATE: 03/19/2003

PATENT APPLICATION: US/09/901,572A

TIME: 12:31:57

Input Set : A:\010898.txt

Output Set: N:\CRF4\03192003\I901572A.raw

L:9 M:270 C: Current Application Number differs, Replaced Application Number

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date